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Lincoln (D.F.)

VIENNA MEDICAL EDUCATION.

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A YOUNG man commencing his medical studies in Vienna must have reached the age of seventeen. He must bring a certificate from the gymnasium that he has completed the eight years' course,† and has passed a satisfactory final examination (*Abiturienten-examen*).

The regular medical course lasts five entire years, with the exception of the two months' vacation in summer, the fortnight at Easter, and the fortnight at Christmas. With the gymnasium course, this makes thirteen years; and if we include the necessary instruction in a grammar-school, previous to entering the gymnasium, we find that the Austrian physician, before commencing practice, has to bring legal attestation to seventeen or eighteen years of study, of one sort or another. And to this statement we may add, that the process of obtaining the degrees of M.D. and Chir. D. occupies a number of months after graduation; and that a very large number of young doctors seek still further to extend their knowledge by getting positions as Assistants in Vienna, or elsewhere, for a couple of years, before commencing general practice.

The most advanced standard of American medical education (if my information is correct), is that to which the College of Physicians and Surgeons in New York conforms, and which requires attendance upon three courses of winter lectures, each lasting five months—or, in other words, three

half-years of study—beside certificates of "study under the direction of a practitioner of medicine" for the other three half-years. The number of years of study, before the student commences Medicine, cannot, of course, be stated; but, doubtless, in the opinion of many students, eight years will do.

The question naturally suggests itself:—Are the German medical students naturally more stupid than the Americans, or are they, at the close of their studies, twice as well educated? Or, again, Are they obliged to waste valuable time in learning theory, to the comparative neglect of practice? We can well dispense with the consideration of the comparative intellectual capacity of the two races; but it will be worth our while to look at the facts, as to the method of instruction here followed, and to compare them in our own minds with corresponding facts in our own system.

The student is at liberty to follow any order he chooses, in his medical studies; with the exception that, before studying Practical Midwifery, he must have studied Practical Clinical Medicine for two semesters (half-years). In general, in fact, almost always, he follows nearly the plan which is here subjoined, as given in the *Oesterreichischer Studenten-Kalender*.

The required studies—i. e., those upon which the student must pass an examination—are stated below, in connection with *Rigorosa*. It is difficult to distinguish them in the scheme; almost all are more or less necessary.

Semester I.—Medical Hodegetics, Descriptive Anatomy, Dissection, Mineralogy, Zoölogy, Zoöatomy, General and Medicopharmaceutical Chemistry and Structural Botany.

II.—Descriptive, topographical and comparative Anatomy, Chemistry, Botany, and Lectures on Medicinal Plants, preparatory to Pharmacognosy.

III.—Topographical Anatomy, Dissection, Physiology, General Pathology, Pharma-

VIENNA, March 29th, 1871.

* MESSRS. EDITORS.—The attention of our medical public has been of late so strongly called to the system of teaching in Vienna, that any trustworthy information has been welcomed among us. Will you permit me to lay before your readers a few facts, such as I have been able to collect on the spot?

Respectfully, Your ob't serv't,

D. F. LINCOLN.

† This course, in Austria, embraces the following studies:—Obligatory: Religion, Latin, Greek, German, Geography, History, Mineralogy, Botany, Zoology, Physiology, Logic and Psychology. Non-obligatory: Modern Languages, Drawing, Singing, Gymnastics, Stenography.

cognosy, General Therapeutics, Instruments and Bandages, Clinical Propædæntics. And so forth.

In the fifth and sixth half-years, study under Oppolzer; and in the seventh and eighth, under Skoda (Duchek). Commence Surgery in the fifth, and Midwifery in the seventh. Space is allotted to Skin Diseases, Children's Diseases, Syphilis, Laryngoscopy, beside the list of required studies. Theory and Practice is not studied, therefore, in the first two years; nor is Clinical Surgery. A course on Percussion and Auscultation is expected to precede the study of Medicine under Oppolzer.

Are the students in earnest? Do they work reasonably hard? As regards the great majority, we must answer these questions in the affirmative. It is not much the fashion, here, to waste time in drinking and duelling, and the other refined enjoyments of the traditional "German Student's" life. The only control exercised over them, in respect to studies, is the necessity of bringing the signatures of the several Professors, inscribed in a sort of pass-book, as proof that they have attended the required courses of lectures. They must, at least, have paid for all the courses. If they attend them, they spend an average of five or six hours daily in the lecture-room; and a good student should also spend a couple of hours a day in private reading. Saturday and Sunday are official holidays, but a good many clinics are continued, and some courses of lectures are expressly advertised as given "on Saturdays and Sundays only."

Examinations for Degrees.—During the last year of study, the students' energies are constantly stimulated by the impending examinations, appropriately called "*Rigorousa*." It is usual to pass the first, and the severest of all, within a few months after completing the term of five years. I do not find that there is anything here like the English system of "coaching" for an examination, but there is a great deal of study—of legitimate, rational study, I mean—devoted directly and specially to the end of passing the examinations. One may infer what that study is, from the following specimen-advertisement:

"For those preparing for their *Rigorousum*, the undersigned begins a course upon Pathological Anatomy on Monday, March 6th; Time, 5½–6½, P.M.; Place, Autopsy-room. To last 7–8 weeks. Honorarium 12 fl.; 17 fl. for doctors and foreigners.

"Dr. H. KUNDRATH.

"1st Asst., Pathol. Institute."

The first *Rigorousum* embraces the sub-

jects of Botany, Mineralogy, Zoölogy, Anatomy, Physiology, General Pathology, and Pathological Anatomy.

No student is admitted to examination who has not spent at least two years of the five in an Austrian University. Public disputations, and the presentation of theses, do not form a part of the *Rigorousa*. There are no written questions.

The Examining Board sits once a week during term-time. Students have first to show the attestation, in the form of the Professors' signatures, to the fact of their attendance upon the prescribed courses during the five years; they then, in groups of three or four, are ordered to present themselves on a given day before the Board, for examination.

Upon the day appointed, the first student, alone, enters the *Rigorousum*-chamber, where he meets one Professor, with the Dean of the Doctors' College, and the Dean of the Faculty. He is questioned by the first two gentlemen for ten or fifteen minutes, or until the Dean of the Faculty declares that the examination is sufficient. He then retires, is marked by the Professor, and student No. 2 comes in to repeat the same process. When all are examined upon one subject, a second Professor is at hand to examine upon a second subject, and the process is thus continued till all the subjects are disposed of. A moment's calculation will show that the examination of four students occupies from four to six hours. Afterwards, the Professors assemble, consult, and vote. A candidate may be disposed of in several ways. In the first place, he may be passed unconditionally; secondly, he may receive his degree "*cum admonitione*," being advised that he had better look up certain branches; thirdly, he may be conditioned on one, two or three studies, and ordered to appear in from two to six months to be re-examined; fourthly, he may be compelled to undergo the entire examination anew; and, lastly, what almost never happens, he may be unconditionally rejected.

The second *Rigorousum* for the degree of M.D. embraces the following studies:—Chemistry, Pharmacology, Legal Medicine, Special Medical Pathology and Therapeutics (i. e., General Theory and Practice), and Ophthalmic Medicine.

An interval, which I cannot now state, intervenes between the first and second *Rigorousa*. The additional degree of Doctor of Surgery is taken by most practitioners, and two similar examinations have to be passed before that degree can be had; and

if the physician wishes to practise Obstetrics, he passes a fifth examination and becomes Master of Midwifery. Masterships of Ophthalmic Medicine, and of Veterinary Surgery, are also conferred.

Let us now turn our attention to the more special characteristics and advantages of the Vienna School.

Clinical Facilities.—I do not know how many patients are exhibited annually to students, but the number may be reasonably estimated at twenty thousand. The departments of Surgery, General Practice, Ophthalmic Medicine, Diseases of the Ear, Midwifery and Syphilis, have each two clinics; in Children's Diseases, Auscultation and Percussion, Psychiatria, Propædæntics, there are also regular daily clinics; there are four "ambulant" or out-patient clinics in Medicine and Surgery; and each clinic undoubtedly receives two, three, or more, new patients a day. If to this we add the fact that a great many patients are shown by private teachers, "*Privat-docenten*," we shall find that twenty thousand is an exceedingly moderate estimate.

But, is this all, in a population nearly as large as that of New York, and full of wretchedness and disease? It is not all, certainly. Taken together, the *Rudolf's Spital* and the *Gumpendorfer Spital* will contain about two-thirds as many as the General Hospital; but the students are almost entirely excluded from the two smaller hospitals. And the number of poor patients that are now treated at home for various common diseases must be very great; but the students have no opportunity of coming into contact with this class. In one sense, there is great practical advantage in concentrating a mass of material upon a spot of ground which one may walk around in fifteen minutes. It saves a vast amount of time, to have practical examples brought together in one building. Yet it may be questioned whether something like our own Dispensary system could not be made profitable to the student, in introducing him to actual practice. There is certainly a good deal of complaint made of the deficiency of this part of medical teaching in Vienna. As instruction, it is admirable; but "the student gets no chance to practise either Medicine or Surgery till after he takes his degree." Did no student ever make the same complaint in Boston?

As already mentioned, a Doctor of Medicine and Surgery may obtain, after a year's probation, the place of Assistant in some hospital, and may keep that position from one to three years. Or, he may be so for-

tunate as to win the appointment of Surgical Apprentice, by passing a competitive examination. I believe eight appointments of the latter sort are made annually. The apprentice has to perform almost all operations under the supervision of Dumreicher or Billroth; in fact, there could be no better practical school for surgery.

That the strictures just made are not unfounded, is shown by the universal desire, felt by professors and students alike, that the whole *Allgemeines Krankenhaus* should be made accessible to the students. The subject is now open; or, rather, it may be said that the proposed step will be taken as soon as the Government of Lower Austria, which controls the hospital, will give its consent—a consent which is rather problematical at present.

In an excellent article on Vienna, published in the *British Medical Journal*, by J. F. Payne, M.B., Oxon., similar strictures are applied, much more severely, to the opportunities for clinical instruction in Berlin. Without further discussing this point, let us again state clearly the complaint that is made: it is, namely, that students do not actually have cases put into their hands to treat; and that they do not receive enough attention in the way of direct personal instruction and supervision from the clinical teachers of General Medicine and Surgery. In fact, a student's obligations in this direction cease when he has reported four medical and four surgical cases; though he may report many more if he chooses. There are only four clinical wards, for General Medicine, in the whole hospital. The Professors try to make the best of this arrangement by changing the patients frequently; but they are not responsible for the fact that only eighty or ninety beds are allotted to this study—and that students are actually excluded from visiting the rest of the hospital, except in the study of specialties.

There is another arrangement—or, rather, a want of arrangement—which is so palpably bad as to have become matter of general comment. I refer to the manner in which Oppolzer's clinic has hitherto been conducted. Students have crowded the ward, to the number of one or two hundred, roaming about at will, only occasionally getting near enough to hear an account of a case, and but seldom seeing the patient and the Professor at once. But as I write these lines, the arrangement is changing. Skoda has just retired; the torchlight-procession of near two thousand students—the complimentary, but heart-felt addresses—the new portrait on the old walls—are

matters which you will doubtless have heard of. Duchek succeeds him, but exchanges wards with Oppolzer; and a new lecture-room is to be provided for Duchek, so arranged that patients may be wheeled in and out from the wards on train-ways, when needed for clinical illustration. Skoda's clinical lectures were not crowded; the students all took seats, the ward was perfectly quiet, and the examination was conducted in a very orderly manner.

Practical Anatomy is fairly provided for. The dissection-room has nothing to boast of; it contains some sixteen tables, rather poorly lighted. The number of *whole* subjects may be 120 per annum; of subjects eviscerated in the autopsy-room, 180; beside a number of bodies of infants. A whole subject is given to two groups, of four each; a subject without viscera, to four such groups. The heads of the subjects, as a rule, are not allowed to be opened, being reserved for Hyrtl's Museum. Each student is required to register for Anatomy at least three semesters; in which time he is likely to get nine chances to dissect. If he chooses, he may register for four or five semesters.

A serious fault, to the writer's mind, lies in the fact that the student has to be examined in so many things at once—botany, mineralogy, &c.—things studied, perhaps, faithfully, three or more years previous to the Rigorosa, but which the student has had *no previous opportunity to be examined upon*. It must be a grievance to have to review the mass of old and new studies, all together, at the end of five years.

Mode of Teaching.—Text-books are recommended, but are not used to recite from. All lectures are clinical, if the nature of the subject admits of that mode of treatment. Professors and Assistants have certain rights in regard to the use of "material." Thus the two surgical and the two medical clinics have the right to any patient entering the hospital, as long as such patient is likely to be of use. Patients with certain diseases are of course sent to the clinic, or the wards, of a specialist; and all the important specialties are provided with large wards, which furnish ample material for private and public lectures. Sometimes the lecture is of the nature of a visit to the ward, with remarks by the professor; sometimes it is given in a separate room, and the patients are brought in one by one. In every case, the patient is brought so near that the student, by taking a little pains, can see, touch, auscult, or question him. Some of the *pri-*

vate courses are perfect models of teaching. The instructor sits, surrounded by a dozen pupils; the patients are brought in, one by one, and each pupil *must* see—*must* answer questions—cannot help learning, in fact.

The American student is entirely independent; can go anywhere, by paying his fee (which "for doctors and foreigners" is usually a third higher than for Austrian subjects); does not need to matriculate, and comes very little in contact with the German students, unless he chooses to seek their acquaintance. He may come at almost any season of the year, and find profitable and abundant employment without delay.

The *Privat-docent* is a physician who is entitled to lecture on a given subject. He charges his own rates, and appoints his time to suit circumstances. Usually, he is able to get abundance of material from the wards to illustrate his lectures, though he cannot be said to have the absolute *right* to use the material. Private lectures are given, not only by these gentlemen, but also by Assistants and Professors. But be the lectures public or private, they are accessible to the men who can pay. At any given time, one may find here a dozen or twenty series of interesting special courses going on, and never need wait long for a new course to commence, for the usual length of the great number of courses is from three to eight weeks. These are the courses that "pay;" they are what the foreigner wants; the teachers are ambitious, and the classes are small.

The number of Ordinary Professors is eighteen; of Extraordinary Professors, twenty-four; of *Privat-docenten*, forty-four; of Assistants, twenty-nine, making a total of one hundred and nineteen, or, deducting four Assistants, who are also *Docents*, one hundred and eleven teachers.*

The growth of the "High-School" of Medicine in Vienna has been very remarkable of late years. In 1865, the number of students in the winter-term was 859; since which time it has steadily increased, until last winter it amounted to 1425. Of this large number, only 117 belonged to countries without the Austrian jurisdiction. In the official list, one hundred and eleven courses of lectures are advertised, which is an increase proportionate to the general growth of the school.

There remains the task of enumerating

* Assistants often teach without becoming *Docents*. This is the fact, though whether it is strictly in accordance with the statutes, I cannot say. Assistants, therefore, are here included in the list of instructors. The statistics are from this year's "Medico-Kalender."

the subjects which present the most valuable inducements to the foreign physician who thinks of studying here. The reader is requested to pardon omissions.

Children's Diseases.—The St. Anna Hospital is but five minutes' walk from the General Hospital. Here a daily clinic is held by Widerhofer. Nothing can be more satisfactory than the way in which practice and theory are alternately presented by the skilful and humane Professor. The material is exceedingly rich and instructive, and there is frequent opportunity to see autopsies.

Skin Diseases and Syphilis.—Hebra and Sigmund are at the head of these most important and valuable clinics. Their Assistants are well known to the medical world through their independent researches, and their valuable publications.

General Pathological Anatomy.—The material comprises perhaps 2400 autopsies in a year. The Assistants are very excellent instructors. It is, however, very difficult to hear Rokitsansky's voice in his lectures.

General and Experimental Pathology is taught in Stricker's Laboratory. Here is an excellent opportunity to "work with the microscope" in any line of investigation one chooses, under the general guidance of a man of first-rate talents. Klein, a valuable teacher in that department, is very soon to leave for London, where he will be connected with the New St. Thomas's Hospital.

Operative Midwifery is most admirably taught. The courses are exceedingly practical, many operations being performed on the cadaver, and others on the phantom. In practical midwifery, there is no need to enlarge on the advantages offered to the diligent student. Perhaps Dublin is the only rival of Vienna in this respect.

The Ear is taught by two very able and distinguished men, Gruber and Politzer.

The Eye.—Arlt, von Jäger, Stellwag von Carion, are the Professors.

Psychiatry.—Meynert gives a daily lecture in the Insane Asylum, usually illustrated by practical examples; the Professor presenting the patient before the class, and conversing with him as long and as freely as may be necessary in order to expose his disease. From personal observation, I should judge that the influence of this treatment was rather beneficial than otherwise. I have not yet had the honor of hearing Professors Schlager and Leidesdorf.

Auscultation and Percussion are well taught by several instructors.

Physiology and Higher Anatomy.—

Brücke's lectures, with microscopical illustrations, are characterized by good method, and great clearness and directness.

The following names are added, without comment:

Hyrtl and Voigt—Descriptive Anatomy.

Billroth and Dumreicher—Surgery.

Oppolzer and Duchek—General Clinical Medicine.

Braun and Späth—Midwifery and Gynecology.

Benedikt—Electro-Therapeutics.

Patruban—Surgical Anatomy.

Cost of Living.—A comfortable room, with attendance, costs from 15 to 25 gulden per month; and one's food costs, say 10 gulden per week. The present value of the pound sterling is nearly 12½ gulden, but the paper currency of Austria fluctuates like our own. Lectures cost from five gulden to fifteen or more, for a course of very indeterminate length, and most foreigners take six or eight courses in a term; say sixty or eighty gulden. The German student pays from thirty to fifty gulden a term; but good students, on proving poverty, are excused from one-half or the whole of the fees.

Lectures commence at eight in the morning, and last till seven at night. One usually hears from four to six lectures a day; owing to their clinical character, they do not exhaust the attention as they might if they were so many written prelections. And it is also very agreeable to find that the most interesting subjects do not often "collide" with each other in the time-table; one can always make a list of four or more courses of special interest, which can be heard on five days in the week.

Strangers are apt to find it very hard to get information regarding the courses. One has to go on a sort of house-hunting expedition, as it were, looking at scores on scores of bits of paper, posted in all parts of the hospital; for a great number of private courses are not advertised in the printed list. Or one goes to the various clinics, and asks the Professor, or Assistant, "when his next course begins," &c. English and American friends are very useful—*experto credite!*

The Winter-semester begins on the first of October, and lasts till Thursday before Palm Sunday; the Summer-semester begins on the Thursday after Easter, and lasts till the end of July. One can study Midwifery, and various other subjects, perfectly well in the summer vacation.

The climate of Vienna is very variable. The Danube-fogs make the winter season exceedingly dull and depressing, but during the rest of the year there is a great deal of fine weather, liable to sudden changes to snow or rain. In the warm season, everybody sits out of doors in the evening; but it is never so hot as our New England summer. The low lands, near the canal, were overflowed a few weeks ago. If one has a special aversion to "the shakes," he will take care not to choose a lodging in that neighborhood. Consumption is excessively fatal here—whether under the

name of tuberculosis or of caseous pneumonia; it is, in fact, called the *Morbus Austriacus*. But it is hard to tell whether the fog, sleet and rain play the chief part in producing this result, or whether the poverty, the bad habits, the unwholesome mode of life, and the crowded dwellings of the populace are not a chief cause.

In conclusion, the writer would thank those gentlemen who have most kindly assisted him in gaining information; and would advise those who have the chance, to go and see, for themselves, what Vienna is like.

The object of the present work is to present a complete and accurate account of the history of the United States from the first settlement of the country to the present time. The work is divided into two parts, the first of which contains a general history of the country, and the second a more detailed account of the various states and territories. The work is written in a clear and concise style, and is intended for the use of students and the general reader. The work is published by the Government Printing Office, and is sold by the various bookstores and libraries.

